
Appendix A-1: Junction City Comprehensive Plan Text Amendments

PROPOSED "APPENDIX C: YEAR 2000 LAND NEEDS ASSESSMENT" JUNCTION CITY COMPREHENSIVE PLAN

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SUMMARY

Appendix C presents the results of the Year 2020 Land Needs Assessment, and includes a revised buildable lands inventory and land need analysis for Junction City. This document updates the *Junction City Comprehensive Plan*, pp. 36, 37, 40-44 and 75-107, specifically:

- The Population Growth Projections (pp. 36, 37);
- The Economic Development Element trend analysis (pp. 40-44);
- The 1982 "Junction City Buildable Lands Inventory" (pp. 75-79);
- Appendix I, which includes Appendix A "Tables" and Appendix B "Meeting Low Income and Regional Needs for Housing" (pp. 80-89);
- The "Goal 14: Urbanization, Analysis" (pp. 90-97); and
- Appendix II, which includes additional information adopted by the City in 1983, in order to comply with Statewide Planning Goals (pp. 98-107).

The updated buildable lands inventory is based on data from the Lane Council of Governments (L-COG). The land need analysis is based on recent socio-economic and development trends in Junction City.¹ This analysis has been modified to be consistent with the draft Junction City TSP, based on comments from Clair Van Bloem, L-COG. Basic conclusions include:

- **In 1999, Junction City had about 1,738 total acres within its Urban Growth Boundary (UGB). Of that, about 813 were developed and 925 were vacant. Of total vacant acres, about 198 acres were constrained by wetlands, leaving a total of 727 vacant buildable acres.**
- **Of the 727 vacant buildable acres within the Junction City UGB, more than one-third (273 acres) are in the Professional/Technical designation. Another 198 acres have an Industrial designation. About 205 acres are in Residential designations, and the remaining 52 acres are in Commercial designations.**
- **The population projections and land needs analysis in the acknowledged Junction City Comprehensive Plan are nearly 20 years old. The revised Year 2020 population projection of 8,130 represents an average annual growth rate of 1.9%. This projection was derived from the draft *Junction City Transportation Systems Plan*, which has been coordinated with Lane County.**

¹ Where in conflict with pp. 75-107 of the *Junction City Comprehensive Plan*, the revised analysis in this Appendix takes precedence.

- In 1998, the Junction City UGB had a total of 2,252 dwelling units. About 57% of the 2,252 units were considered single-family. Based on recent development trends, there is need for about 1,515 new dwelling units between 1998 and 2020. Junction City has a deficit of about 122 gross acres of buildable residential land within its 1999 UGB – 104 Low Density Residential and 17 Medium Density Residential.
- The Junction City UGB has a 35-acre deficit of buildable commercial land, and a 371-acre surplus of buildable industrial land. Some of this commercial deficit may be accommodated on land designated for industrial use.

SECTION 1. METHODS

In 1998, ECONorthwest (ECO) completed a buildable land inventory and a land needs assessment for Junction City in coordination with Lane Council of Governments. In 1999, ECO updated the buildable land inventory and revised the land needs analysis.

ECO conducted a land needs analysis consistent with Statewide Planning Goals 9 (Economy of the State) and 10 (Housing), their applicable administrative rules, and ORS 197.296 (H.B. 2709).² Specifically, this section:

- Presents an inventory of buildable land in Junction City as of April 1999 based on data provided by the Lane Council of Governments (L-COG);
- Evaluates residential land need based on recent information, including assumptions about the planned development of the Milliron prison facility in Junction City;
- Evaluates land needed for employment (commercial and industrial) in Junction City; and
- Compares land supply and land need to identify plan designations where a surplus or deficit of buildable land exists.

The land supply analysis used 1999 data from the Lane Council of Governments GIS (Geographic Information System) Department. The L-COG GIS database includes the following coverages:

- Tax lots (with associated assessment data)
- Land use
- Plan designation and zoning
- NWI Wetlands

² ECONorthwest originally prepared two land needs analyses – one using assumptions in the existing Comprehensive Plan, the other using assumptions based on recent trends and including calculations for a new prison. Because the prison is now a certainty, and there is now a coordinated TSP population projection, only one needs analysis is presented in this Appendix. This needs analysis is consistent with the latest draft Junction City Transportation Systems Plan (TSP).

- Hydric Soils
- FEMA FIRM 100-year floodplains

L-COG also provided a summary of the Lane County address file; this file allows a count of addresses on each tax lot. ECO used this information to develop an estimate of the total number of units, by type, in Junction City as of April 1999. They also reviewed wetland delineations completed by Jay Lorenz for the subject site. Junction City does not have a comprehensive inventory of wetlands. The Lorenz delineations have been reviewed by the Natural Resource Conservation Service, and have received a letter of concurrence from the Division of State Lands.

The residential land need projection is based on the population projections and assumptions presented in the draft TSP prepared by L-COG. This projection factors in recent socio-economic trends and impacts expected from construction and operation of the planned Milliron Prison. The prison is slated for completion in 2005.

The following sources of information were used to estimate need for buildable land to accommodate housing and employment through the Year 2020:

- L-COG population and employment forecasts
- Junction City planning documents
- Building permit and subdivision approval data
- Market information (for Junction City and the Eugene-Springfield area), including interviews with people knowledgeable about residential, office, and industrial development in the metropolitan area (brokers, developers, planners)
- Information on the configuration, requirements, and likely impacts of the future prison

SECTION 2. LAND SUPPLY

This section presents the results of ECO's buildable lands inventory—in other words, it describes the supply of buildable land in the Junction City UGB. All of the data presented in this section are based on L-COG GIS data that are current as of April 1999. All acreages reported represent land in tax lots.³ A series of detailed land inventory tables is presented in Section 5 (Buildable Lands Inventory).

³ Land within street rights-of-way is not included within tax lots. Where street access to lots has been provided, typically for smaller and developed lots, acreage is expressed as "net acres". For larger parcels that would be subdivided for development, requiring new dedicated streets, land is measured in gross acres.

Total Land Base

According to the L-COG data, Junction City had approximately 1,800 tax lots as of April 1999. The majority of these tax lots (about 1,500) were within the City Limits.⁴ The 1,800 tax lots comprised about 1,740 acres (see Tables 13 and 14 in Section 5). About 675 of these acres were within the present City Limits (about 37% of the total area in the UGB). Thus, more than 60% of the land area within the City's UGB was outside the City Limits. For example, the professional-technical area had over 330 vacant acres in the UGB on only seven tax lots. All land designated for professional-technical use was outside the City Limits.

About 813 acres within the Junction City UGB (including areas within the City Limits) were developed (47%). Slightly over 526 acres inside the City Limits were considered developed in 1999 (over 89%). About 47% of all land in the UGB (including areas within the City Limits) was considered developed in 1999.⁵ Thus, most of the city's inventory of developable land lies in the urbanizable area between the City Limits and the UGB.

Developed Land

Table 1 shows developed land by plan designation and location. In 1999, about 41% of all developed land in the UGB was designated for and in residential use. About 21% of developed land in the UGB was designated for industrial use, while 14% was designated for commercial uses. Developed land in the unincorporated UGB was generally in public (40%), low-density residential (36%), or industrial (17%) designations.

⁴ Areas of the Junction City Limits fall outside the Urban Growth Boundary (UGB). ECO estimate that about 88 acres of land exist outside the UGB but within the city limits.

⁵ This includes about 80 acres designated Public used for the City's sewage lagoons.

Table 1. Developed Land by Plan Designation and Location in 1999

Plan Designation	City (City Limits + UGB)			City Limits			Unincorporated UGB		
	# of Tax Lots	Total Acres	Percent of Total Acres	# of Tax Lots	Total Acres	Percent of Total Acres	# of Tax Lots	Total Acres	Percent of Total Acres
Commercial	280	97.5	12.0%	267	87.5	16.6%	13	10.0	3.5%
Commercial/Residential	101	17.8	2.2%	101	17.8	3.4%			0.0%
Industrial	105	174.0	21.4%	65	124.0	23.6%	40	49.9	17.4%
Low Density Residential	1,181	268.8	33.1%	944	164.7	31.3%	237	104.2	36.3%
Medium Density Residential	101	62.7	7.7%	96	58.2	11.1%	5	4.4	1.5%
Professional/Technical	8	0.4	0.1%			0.0%	8	0.4	0.1%
Public	22	192.1	23.6%	20	73.9	14.0%	2	118.2	41.2%
Total	1,798	813.3	100.0%	1,493	526.2	100.0%	305	287.2	100.0%

Source: Lane Council of Governments, analysis by ECONorthwest.

Buildable Land

ECO's analysis started with the 1999 L-COG data summarized in Section 5, Buildable Lands Inventory. Junction City is virtually flat with large concentrations of hydric soils, so that the greatest development constraint is wetlands.

ECO originally reduced L-COG's estimate of vacant land to account for land that was constrained by wetlands appearing on the National Wetlands Inventory.⁶ The NWI, however, significantly underestimates actual wetlands. In 1997, Jay Lorenz, Ph.D., completed wetland delineations for 263.4 acres of land west of Oaklea Drive – an area representative of land within the Junction City UGB. About 30% of this area (79 acres) had wetlands. A review of hydric soil information provided by L-COG (based on the Soil Survey of Lane County), showed only 49 acres of hydric soils in the same area. There were 31 more acres of wetlands than hydric soils. Thus, reliance on hydric soils as an indicator of wetlands may under-estimate unbuildable wetland area in Junction City – by as much as 63%.

This analysis takes a middle position among three potential estimates of the amount of land constrained by wetlands in Junction City – the NWI (low), the Lorenz delineations (high) applied proportionately to vacant land within the UGB, and hydric soils applied to vacant land within the UGB (medium). The NWI data presents the least likely scenario: less than 30 acres were identified as wetlands in the NWI inventory within the UGB. At the high end, reliance on proportionate application of the Lorenz delineations would have resulted in over ten times this

⁶ In a typical buildable lands inventory, one would also subtract other types of constraints like floodways, riparian buffers, steep slopes, and natural hazards. The topography of Junction City (flat) means that it has few, if any of these constraints that would require additional land beyond wetlands to be categorized as unbuildable. ECO limited its reductions to wetlands.

amount – approximately 321 wetland acres. Using hydric soils provides a reasonable basis for estimating constrained wetland area.

Table 2 estimates vacant, vacant constrained (wetland), and vacant buildable land in Junction City as of April 1999. The UGB has about 925 acres of vacant land. Assuming that the presence of hydric soils is a reasonable indicator of wetlands, unbuildable wetlands account for about 198 vacant acres.

Table 2. Estimated Vacant, Potentially Constrained, and Buildable Land in 1999, Junction City UGB

Plan Designation	Tax Lots	Total Acres	Vacant Acres	NWI Acres	Hydric Soil Acres	Buildable Vacant Acres ^a
Commercial	36	153.0	55.5	0.3	3.8	51.6
Commercial/Residential	5	18.4	0.6	0.6	0.0	0.6
Industrial	31	480.0	306.1	12.2	107.9	198.2
Low Density Residential	126	440.2	171.4	14.4	19.5	151.9
Medium Density Residential	17	122.3	59.6	1.3	7.2	52.3
Professional/Technical	7	332.7	332.2	0.5	59.4	272.8
Public	0	192.1				
Total	222	1,738.7	925.4	29.4	197.9	727.5

Source: Lane Council of Governments, analysis by ECONorthwest

^a Buildable vacant acres is vacant acres minus hydric soil acres. See text for explanation.

The Milliron Prison will take another 30-50 gross acres out of the vacant land inventory. This translates to 19-32 gross vacant buildable acres, when the ratio for hydric soil in vacant industrial parcels (34%) is applied. This analysis assumes the prison will remove an additional 32 gross vacant buildable acres from the industrial land inventory.

Summary

Table 3 compares the distribution of developed, constrained, and buildable land by plan designation. Less than 1/2 of all land within the Junction City UGB was developed in 1999.

- The distribution of buildable land by plan designation is significantly different from that of developed land, primarily because of the large inventory of buildable land designated for Professional-Technical uses. A significant portion (273 acres) of the land in Professional-Technical designation is buildable. Over 36% (about 330 acres) of the vacant land inside the UGB is in this designation; all the Professional-Technical land is outside the City Limits. About 27% of buildable land is designated Industrial, while only 21% of vacant land is designated for residential uses.

- Based on historic development trends, the City has over-allocated lands in Professional-Technical and Industrial designations. These two designations make up nearly 65% of the City's vacant buildable land, but account for only 22% of developed land.
- The majority of constrained land is on land designated for industrial and professional/technical use; 167 of the 198 acres of constrained land are designated for these two uses.
- The Milliron prison will take another 32 gross vacant buildable acres out of the inventory of buildable industrial land.⁷

Table 3. Distribution of Developed, Constrained, and Buildable Land by Plan Designation in 1999, Junction City UGB

Plan Designation	Developed Land		Constrained Land		Buildable Land		All Land	
	Acres	% of Acres	Acres	% of Acres	Acres	% of Acres	Acres	% of Acres
Commercial	97.5	12.0%	3.8	1.9%	51.6	7.1%	153.0	8.8%
Commercial/Residential	17.8	2.2%	-	0.0%	0.6	0.1%	18.4	1.1%
Industrial	174.0	21.4%	107.9	54.5%	198.2	27.2%	480.0	27.6%
Low Density Residential	268.8	33.1%	19.5	9.8%	151.9	20.9%	440.2	25.3%
Medium Density Residential	62.7	7.7%	7.2	3.7%	52.3	7.2%	122.3	7.0%
Professional/Technical	0.4	0.1%	59.4	30.0%	272.8	37.5%	332.7	19.1%
Public	192.1	23.6%	-	0.0%	-	0.0%	192.1	11.0%
Total	813.3	100.0%	197.9	100.0%	727.5	100.0%	1,738.7	100.0%

Source: Lane Council of Governments, analysis by ECONorthwest.

SECTION 3. LAND NEED

This section analyzes demand for land in Junction City between 1998 and 2020. In general, demand for non-residential land is a function of employment, while demand for residential land is a function of population.

The analysis of residential land begins with the L-COG housing needs projections completed as a part of the draft *Junction City Transportation Systems Plan*. Recent development trends are described, along with the impacts of the Milliron Prison on the 20-year demand for housing. Finally, demand for land needed for employment is estimated using a combination of employment projections, development trends, and expert interviews.

⁷ These 32 acres are removed from the Industrial supply in Table 12, Comparison of Land Needed for Employment and Land Supply.

Demand for Residential Land in Junction City

This section presents an estimate of residential land demand based on current information. In 1995, L-COG prepared a draft TSP for Junction City. That plan presented projections of population, employment, and housing units. In 1996, the Oregon Legislature passed House Bill 2709 – which added new periodic review requirements for cities over 25,000 or fast-growing cities. While Junction City does not have to comply with many of the provisions of HB 2709, the requirement that communities review residential development trends and densities provides more current information on the distribution and density of housing recently built in the community. HB 2709 provides a more market-oriented approach to estimating land need. The review of density of recent development provides a more accurate picture of the type of development that has occurred in the City since 1990. This section applies a different set of assumptions to develop an alternative estimate of residential land need.

DRAFT JUNCTION CITY TSP, 2000

The Lane Council of Governments generated population growth estimates for Junction City's 1996 Transportation System Plan. These projections were based on recent growth patterns in Lane County and Junction City. L-COG estimated the 1990 population within the Junction City UGB to be about 4,596 persons. According to L-COG, about 900 persons lived in the area between the City Limits and the UGB. The draft 2000 Junction City Transportation System Plan assumed an average annual growth rate of 1.9% for the area within the UGB through the Year 2015.⁸ At this rate, population within the Junction City UGB is projected to reach 7,400 persons by 2015.⁹

While the population of Junction City has not grown as rapidly as projected in the City's Comprehensive Plan, the City is still experiencing steady growth at rates comparable to the state and Lane County. Naturally, the increasing population will lead to a need for additional housing. However, population growth is only part of the equation—household sizes, vacancy rates, and persons living in group quarters are also important variables in estimating housing demand. L-COG also developed housing unit projections as a part of the draft TSP. L-COG projects household size to decrease to 2.27 persons per household by 2015. Based on an expected population (within the UGB) of 7,400 persons and a household size of 2.27 persons per household (less an estimated 100 persons in group quarters), Junction City will have 3,216 households by 2015.

Table 4 shows L-COG projections of housing units by type that will be needed within the Junction City UGB in the year 2015. This projection is based on the expected households in the

⁸ A growth rate of 1.3% was assumed for area within the City Limits. The addition of 900 persons in the urbanizable area raised the effective rate to 1.9%, as recommended by the TSP Citizen Advisory Committee.

⁹ Applying the 1.9% growth rate to the 2015 projection yields a 2020 population of 8,130 persons.

UGB and also assumes vacancy rates of 2% of owner-occupied units and 5% of rentals. With this additional need factored in, L-COG projects there will be 3,325 housing units in the Junction City UGB by 2015. This represents an increase of about 1,400 housing units between 1990 and 2015.

Table 4. Projected Total Housing Units by Type, Junction City UGB, 2015

Type	Units	Percent of Total
Single Family	1,995	60.0%
Multi-family	765	23.0%
Duplex	233	7.0% ✓
Manufactured Dwellings	332	10.0%
Total	3,325	100.0%

Source: Draft Junction City Draft Transportation Systems Plan, L-COG

As with L-COG's employment projection, the L-COG housing unit estimates did *not* explicitly consider the impact of the Milliron Prison. The prison will affect population, employment, and the demand for housing in Junction City. The projected 400-500 prison employees are accounted for in this analysis by a 32-acre reduction in the industrial land supply, as described in Section 2: Land Supply, above. Some of those employees will choose to relocate to Junction City, increasing population and the need for housing. ECONorthwest estimated that 100 new households will locate in Junction City as a result of the prison. This translates into a population increase of about 230 additional people.¹⁰ This increase is incorporated into Table 5, Revised Estimate of Needed Housing Units.

¹⁰ The exact number depends on a variety of factors including housing costs, where the employees lived before gaining employment at the prison, salaries, and housing alternatives in surrounding communities. Based on employment estimates, the prison would also support or help support about 500 households. Assuming an average household size of 2.27 persons, these households would include about 1,135 persons. The key issue is how many of these households would locate in Junction City. According to staff at the Department of Corrections (DOC), the Department generally tries to hire staff locally. That hiring will, however, certainly include people from Eugene-Springfield, and other surrounding communities. Experience at other prisons suggests that many employees live outside of the community the prison is located in. For example, DOC data indicate that over half of the employees of the Snake River Correctional facility live outside Ontario, with many residing in Idaho. Planners in Brookings estimated that 15% to 20% of 1,438 employees of the Pelican Bay Prison in Crescent City, California reside in Brookings or nearby areas. Based on the information available, the following assumptions appear defensible:

The majority of new employees at the Milliron Prison will live outside of the Junction City UGB. Nonetheless, a substantial proportion (10% to 30%) could be attracted to housing in Junction City if housing of competitive quality and price were available in Junction City. Those percentages imply a future demand for between 50 and 150 housing units that have not been considered in any of the official forecasts.

Table 5 shows total needed housing units in Junction City between 1998 and 2020. This analysis indicates a need for 1,515 new housing units in the Junction City UGB between 1998 and 2020.¹¹

Table 5. Revised Estimate of Needed Housing Units in the Junction City UGB, 1998-2020

Variable	Value
2020 Population	8,360
(-) Persons in Group Quarters	100
+Persons per occupied DU (from TSP)	2.27
(=) Year 2020 projected Occupied dwelling units	3,639
/ (1-vacancy rate) ¹²	3.4%
(=) Year 2020 total needed dwelling units	3,767
(-) 1998 Existing Dwelling Units	2,252
(=) Year 2020 additional needed dwelling units	1,515

Source: L-COG, consistent with draft Junction City TSP methods

Table 6 estimates total housing units by type for 1998, and 2020. Junction City will have an estimated 3,767 dwelling units in 2020. This estimate is proportionately higher than the 2015 L-COG estimate of 3,325 dwelling units.

This housing analysis uses a middle range demand of 100 additional units, or about 230 additional persons. Assuming a 2015 population estimate of 7,400 within the UGB and a 1.9% average annual growth rate (from the L-COG TSP) yields a 2020 population of 8,130. Because L-COG has not yet incorporated the prison into TSP forecasts, the analysis adds 230 persons to the 8,130 to obtain a 2020 population estimate of 8,360.

¹¹ The draft TSP forecasts a 2015 population of 7,400 persons within the Junction City UGB. The TSP population projection translates into a need for 1,420 new dwelling units by 2015, which would require approximately 300 gross acres of residential land. The existing Comprehensive Plan contains an acknowledged population projection for Junction City of 7,732 by the year 2000. Using this acknowledged projection yields a need for approximately 1,515 more housing units, which would require an additional 326 gross acres of residential land. The draft TSP and the Comprehensive Plan estimates above do not include additional housing units due to the proposed Prison.

¹² Consistent with the TSP, this analysis uses 1990 U.S. Census data for Junction City to determine the ratio of rental to owner-occupied housing. Owner-occupied housing is assumed to have a 2% vacancy rate, rental housing 5%. This method yields an aggregate 3.4% vacancy rate.

Table 6. Revised Estimate of Needed Housing Units by Type, Junction City UGB, 1998-2020

Housing type	1998 Units		Needed Units 1998-2020		2020 Units	
	Number of DU	Percent	Number of DU	Percent	Number of DU	Percent
Single-family detached	1294	57%	909	60%	2,203	59%
Duplex	141	6%	106	7%	247	7%
Multiple family	506	22%	348	23%	854	23%
Manufactured/Mobile	311	14%	152	10%	463	12%
Total	2,252	100%	1,515	100%	3,767	100%

Source: ECONorthwest, revised by WPS consistent with Draft TSP assumptions

^a Dwelling Unit (DU) mix from Junction City Comprehensive Plan.

Table 7 shows land need by housing type for the Junction City UGB between 1998 and 2020. The estimates are based on actual density of residential development between 1993 and 1997. The results show a land need of about 260 net acres, which translates into 326 gross acres. The net-to-gross calculation is based on the 20% assumption in the Junction City Comprehensive Plan.

Table 7. Revised Estimate of Land Need by Housing Type, Junction City UGB, 1998-2020

Housing type	Units	Density (DU/Net Acre)	Net Acres	Gross Acres
Single-family detached	909	5.1	178	223
Duplex	106	10.2	10	13
Multiple family	348	7.5	46	58
Manufactured/Mobile	152	6	25	32
Total	1,515	5.9	260	326

Source: ECONorthwest, revised by WPS consistent with Draft TSP assumptions

Demand for Employment Land in Junction City

Estimates of land needed for employment usually begin with employment forecasts. Actual land need can then be estimated by applying employee-per-acre ratios in the aggregate or at the sector level. An aggregate assumption was used for the purpose of this analysis.

The Junction City Comprehensive Plan applies a developed-land-acre-to-population ratio to determine need for commercial and industrial land. Table 8 shows land needed for employment based on assumptions in the Comprehensive Plan.¹³ The results show that Junction City will

¹³ This assumes the acknowledged 2000 population projection of 7,732 will occur in 2020.

need about 130 acres for employment between 1998 and 2020. These results do not consider forecasted employment growth and apply population-to-land-area ratios that are nearly 20 years old.

Table 8. Need for Commercial and Industrial Land, Junction City UGB, 1998-2020, Based on Junction City Comprehensive Plan Assumptions

Comprehensive Plan	Commercial	Industrial
Employment Change	2,556	2,556
Acres/100 persons	83 people/acre 1.2	26 people/acre 3.9
Land Needed	30.7	99.7

Source: Analysis by ECONorthwest, based on Junction City Comprehensive Plan assumptions (p. 77)

STATE AND LOCAL EMPLOYMENT TRENDS

The Oregon Employment Department (OED) projects 10-year employment trends for the State as a whole, as well as for distinct regions within Oregon. As shown in the *OED Workforce Analysis* (OED, July 1999) for the State, service-producing jobs are expected to grow at over double the rate of goods-producing jobs. Manufacturing¹⁴ jobs are forecast to increase by 8.6%, while non-manufacturing jobs are forecast to increase by 20.3%. The largest and fastest-growing job category is service¹⁵ jobs, which as a whole are forecast to increase by 30.6%.

The OED forecast for Lane County nearly mirrors the state forecast. Jobs in goods-producing industries are forecast to increase by 11.9%, while jobs in service-producing industries are forecast to increase by 20.6%. Again, the largest and fastest-growing job category is services, which is forecast to grow by 31.3%.

In summary, the OED forecasts for the state and Lane County describe a trend away from the production of goods (especially traditional lumber, wood and food production), and toward service-oriented jobs.

REVISED EMPLOYMENT PROJECTION

Table 9 shows historic and projected employment for Lane County and Census Tract 4. Because of the substantial state restrictions on development outside of UGBs, it is reasonable to assume that the majority of this employment will occur inside the Junction City UGB. Because we did

¹⁴ "Manufacturing" includes durable goods such as wood products, metals, and machinery, as well as non-durable goods such as foods, textiles, chemicals, and plastics. "Non-manufacturing" includes all other job categories.

¹⁵ "Service" jobs include hotel, personal, business, social, automotive, health, and legal services.

not want to under-estimate potential land demand in Junction City, we assumed that *all* new Census Tract 4 employment will occur within the Junction City UGB.

L-COG estimates that Junction will add 2,640 employees between 1994 and 2015. This equates to an annual average growth rate of 2.7%—substantially higher than L-COG’s projected population growth rate of 1.9%. According to L-COG, part of the reason for a high employment projection (relative to population) is the large surplus of vacant industrial land in Junction City.¹⁶ Part of this surplus, approximately 32 vacant buildable acres, will be consumed by the Milliron Prison as described in Section 2: Land Supply, above.

Table 9. Historic and projected employment, Lane County and Census Tract 4

Year	Census Tract 4	AAGR	Lane County	Percent of Lane
1978	2,220	Na	103,200	2.15%
1980	2,254	0.8%	102,900	2.19%
1982	1,732	-12.3%	90,700	1.91%
1984	1,908	5.0%	96,300	1.98%
1986	2,196	7.3%	99,200	2.21%
1988	2,489	6.5%	109,800	2.27%
1990	2,781	5.7%	118,500	2.35%
1992	3,040	4.6%	117,200	2.59%
1994	3,557	8.2%	125,900	2.83%
2015	6,197	2.7%	177,074	3.50%

Source: Junction City Draft Transportation Systems Plan, L-COG

Table 10 shows estimated land needed for employment within Census Tract 4 between 1998 and 2020. The 2020 forecast uses the L-COG employment projections as a base. All growth in Census Tract 4 is assumed to occur within the Junction City UGB. Therefore, the “gross acres needed” for Census Tract 4 is translated directly to the need in the Junction City UGB. The 1998 employment sector estimates are extrapolated from the 1994 figures using an updated total

¹⁶ Vacant land is only one factor that affects the amount of future employment growth. We recognize that L-COG’s TSP employment projections for Junction City may be optimistic. For example, had we applied the 2.7% AAGR to actual 1998 Junction City employment base, a slightly smaller employment projection would have resulted. We used the 1994 base to maintain consistency with the TSP methodology and to because we did not want to under-estimate the City’s employment potential. Although the typical pattern for small Willamette Valley cities is one of population growth exceeding employment growth, it is also true that the siting of a single big employer (e.g., the prison) can easily make that generalization incorrect in any particular case.

employment for 1998.¹⁷ The 2020 forecast assumes a 2.7% average annual growth rate, as well as a shift in employment types – a greater number of new service jobs compared to new manufacturing, as indicated by state and local forecasts. The employee-per-acre (EPA) assumptions convert employment into land need. The results indicate the Junction City UGB will need about 182 vacant buildable acres between 1998 and 2020 to accommodate employment growth.¹⁸

Table 10. Estimate of Land Needed for Employment, Census Tract 4, 1998-2020

Sector	1998 (estimate)	2020 (forecast)	New Jobs, UGB	Jobs/ Acre	Gross Acres Needed, UGB
Commercial/Office	1,107	2,844	1,737	20	86.9
Industrial	2,395	3,413	1,018	15	67.9
Public	313	853	540	20	27.0
Total	3,815	7,111	3,296	18.1	181.7

Source: Employment estimates based on L-COG growth rate and 1994 employment figures; Jobs/Acre assumptions from work in Benton, Lane and Linn Counties completed by ECONorthwest; Analysis by ECONorthwest

SECTION 4. COMPARISON OF LAND SUPPLY AND LAND NEED

The final step in a land needs assessment is to compare the results of the demand and supply analyses. This comparison determines if sufficient buildable land exists the UGB to meet demand over a 20-year period.

Residential Land Need

Table 11 compares residential land need and supply within the Junction City UGB between 1998 and 2020. This analysis is based on documented need for a total of 3,767 dwelling units in 2020. There is a deficit of about 122 vacant buildable acres of residential land inside the UGB – about 105 acres of Low Density Residential and about 17 acres of Medium Density Residential.

¹⁷ The total employment figure for 1998 (for census tract 4) was not broken down into employment sectors. We estimated jobs per sector using the same ratio as 1994.

¹⁸ This analysis differs from the TSP in that it projects a greater increase in commercial/office jobs, and less of an increase in industrial jobs, based on state and local employment trends. In this projection, 54% of new jobs will occur in the commercial/office sector, and 30% in the industrial sector. The TSP projection assumes a reverse (30%, 54%) job sector distribution through 2015. Projecting the TSP distribution through 2020, industrial need would increase by about 48 acres, and commercial/office need would decrease by about 36 acres from this analysis – a net difference of 12 acres.

Table 11. Comparison of Residential Land Need (in Gross Acres) and Land Supply, Junction City UGB, 1998-2020.

Housing type	Plan Designation		Total
	Low Density	Medium Density	
Single-family detached	223	-	223
Duplex	13	-	13
Multiple family	-	58	58
Manufactured/Mobile	21	11	32
Total	257	69	326
Land Supply (UGB)	152	52	204
UGB Surplus (deficit)	-105	-17	-122
Land Supply (City Limits)	25	9	34
City Limits Surplus (deficit)	-232	-60	-292

Source: ECONorthwest, revised by WPS consistent with draft TSP assumptions

Employment Land Need

Table 12 compares land need and supply for employment within the Junction City UGB. The City has a large surplus (over 6 times the 2020 need) of land designated for industrial development and a deficit of land designated for commercial/office, residential and public uses. The City believes that alternative sites should continue to be provided to ensure choice in the industrial land market. However, Statewide Planning Goal 14 does not allow UGB expansions to meet commercial and residential land needs, where a large industrial land surplus exists. Therefore, some reduction in the industrial land supply will be necessary to meet commercial/office, public and residential land needs.¹⁹

¹⁹ Using the TSP employment distribution, as referenced in the Revised Employment Projection section, would lead to less than 1 acre of surplus commercial land, and over 320 acres of surplus industrial land within the Junction City UGB.

Table 12. Comparison of Land Needed for Employment and Land Supply, Junction City UGB, 1998-2020

Land Supply	Commercial/ Office	Industrial	Public	Total
Land Need	86.9	67.9	27.0	181.7
UGB				
Land Supply	51.6	439.0*	-	490.6
Surplus (deficit)	(35.3)	371.1	(27.0)	308.9
City Limits				
Land Supply	15.6	3.4	-	19.0
Surplus (deficit)	(71.3)	(64.5)	(27.0)	(471.6)

Source: ECONorthwest, 1999

* This is 471 acres of gross vacant buildable land, less 32 acres for the Milliron Prison.

SECTION 5. BUILDABLE LANDS INVENTORY

Background

This section includes the results of ECO's inventory of buildable lands in the Junction City UGB. The buildable lands inventory measures the supply of land suitable and available to meet long-term residential, commercial, industrial and public/institutional growth needs.

The intent of the buildable lands inventory is to develop an approximate estimate of the amount of buildable land by type in Junction City. The buildable lands inventory is *not* intended to meet all the requirements of state land-use planning statutes or administrative rules, or to be an update of the inventory required for the City's comprehensive plan. It identifies two types of unbuildable lands – floodplains and wetlands (hydric soils). Because the presence of hydric soils probably understates actual wetland area, the buildable lands inventory should be considered the *upper bound* on buildable lands. A more detailed consideration of wetland constraints would almost certainly some remove additional buildable land from the inventory.

Methods, Data Sources, and Definitions

ECO began its inventory with data from the Lane Council of Governments (L-COG) Geographic Information System (GIS) database of Junction City. The L-COG GIS includes parcel and sub-parcel²⁰ data on plan designation, zoning, generalized land use, and area for all lands within the

²⁰The L-COG GIS identifies multiple land uses on single parcels. For example, a parcel could have commercial uses on a portion and be vacant on another portion. This system automatically accounts for vacant portions of developed parcels, which would typically be considered underdeveloped.

Junction City Urban Growth Boundary (UGB). L-COG provided the parcel data in an electronic database, with maps of plan designation, zoning, land use, and tax lots.

L-COG revised the land inventory data in 1995 as part of the draft *Junction City Transportation System Plan*. To determine vacant land in April 1999²¹, ECO used several data sources including building permits, approved subdivisions, and field visits.

To complete the inventory, ECO used additional information sources. The most important were:

1. *GIS data and maps.* L-COG provided a database for parcels within the Junction City UGB from their GIS. This database included map and tax lot number, generalized land use, plan designation, zoning, National Wetlands Inventory (NWI) data, FEMA FIRM floodplain boundaries, and hydric soils. The L-COG GIS system also contains data on land use at the sub-parcel level. In other words, the database tracks multiple land uses on a single parcel and provides very accurate data on the location and amount of land use by type in Junction City. L-COG revised and field-checked much of the information in the GIS system in 1995 as a part of the Junction City Transportation Systems Plan.
2. *Building permit and subdivision data.* ECO obtained residential building permit and subdivision data from the City for the period between 1993 and 1997. These data allow us to estimate the amount and density of development that occurred since 1995.
3. *Planning and zoning documents.* ECO reviewed the Junction City comprehensive plan, zoning and subdivision ordinances, and comprehensive plan and zoning maps to determine allowable densities and uses appropriate to each City zoning district.
4. *Field Assessment.* ECO conducted a field assessment to verify data in the L-COG database and identify development that occurred since 1995. The field assessment was not comprehensive, nor was it intended to be. Rather, ECO focused on parcels relevant to the proposed development and large parcels designated for residential or professional/technical use.

The process ECO used in evaluating the supply of vacant buildable land is described below.

1. *Working definitions.* There are many ways that “vacant land” and “buildable land” can be, and are, defined. ECO applied the definitions described below to query the database and create mutually exclusive categories of vacant, redevelopable, and under-developed parcels.
2. *Preliminary Analysis of GIS Parcel Data.* This step provided the initial analysis of the inventory and included summarizing the GIS data by plan designation, zoning, and land

²¹ When conducting land needs assessments, it is not unusual to have a slight gap between the land needs analysis and the buildable lands inventory. In this situation, it is likely that additional housing units were constructed on “buildable” land during the first several months of 1999. However, this number is insignificant when conducting a 20-year land needs assessment. For example, L-COG records indicate that 90 housing units were constructed between April of 1998 and January of 1999. Assuming that half this number was constructed during the first four months of 1999, 45 new residential units would have been constructed. At six units per acre, this translates into 7.5 residential acres.

use. ECO used the database and maps provided by L-COG to conduct the preliminary analysis. One of the results of this analysis was a list of vacant parcels by plan designation which was generated for the field verification.

3. *Field Verification.* ECO used the preliminary list of vacant parcels and maps provided by L-COG to field check all vacant parcels over 10 acres. This step allowed us to (1) verify data in the inventory, and (2) identify development that has occurred since 1995.
4. *Final Analysis of Parcel Data.* Based on the field review, ECO made minor adjustments to the L-COG inventory and produced a summary of developments that have occurred since 1995.

Definitions

VACANT LAND

Vacant Land means all parcels greater than 0.1 acre (4,356 sq. ft.). The minimum lot size for a residential dwelling unit is 5,000 sq. ft. (in R-2 and R-3 districts), but few residential parcels smaller than 5,000 sq. ft. exist.

PARTIALLY VACANT (UNDER-UTILIZED) LAND

Partially vacant land means as vacant portions of developed parcels that are at least 0.1 acre (4,350 sq. ft.). ECO started with L-COG's GIS data to develop an estimate of partially vacant land and added any partial parcels less than 0.1 acres back into the estimate of developed land.

CONSTRAINED LAND

Constrained Land is subtracted from Total Vacant Land to get Buildable Land (which is further divided into totally vacant and partially vacant based on parcel boundaries and existing development on parcels). Most buildable lands inventories consider steep slopes, slide hazards, floodways and floodplains, wetlands, constrained soils and other related constraints. The City has not conducted such an inventory, and a detailed analysis of constraints is not necessary for this analysis. However, L-COG has digitized data on areas within the National Wetlands Inventory (NWI). Although NWI data is generalized, and probably does not include all wetlands, it represents parcels that are most likely to have wetlands and be constrained as a result. L-COG also provided data on hydric soils and FEMA FIRM floodplain boundaries. A review of the City's development policies reveals that these constraints are not absolute; development can occur within these areas provided the requirements of the City's policies are met.

REDEVELOPABLE LAND

Redevelopment Potential deals primarily with parcels with developed structures that are likely to be demolished and new buildings constructed in their place. Because of the large amount of vacant land in the Junction City UGB, ECO anticipate that redevelopment will have a relatively

minor impact on the supply of buildable land. Thus, ECO did *not* assess redevelopment potential as a part of this analysis.

GROSS AND NET VACANT ACRES

A Gross Vacant Acre is an acre of vacant land before land has been dedicated for public right-of-way, private streets, or public utility easements. For example, a standard assumption is that about 25% of land in a subdivision is used for streets and utilities: if so, then a gross vacant acre will yield only about 35,000 sq. ft. (75% of a full acre) for lots.

A Net Vacant Acre is an acre of vacant land after land has been dedicated for public right-of-way, private streets, or utility easements. A net vacant acre has 43,560 square feet available for construction, because no further street or utility dedications are required. The L-COG GIS data are all in net acres.

Following are detailed tables from the land inventory.

Table 13. Generalized Land Use for All land in the Junction City UGB in April 1999

Title	City Limits		Urbanizable Area		Total (City Limits + UGB)	
	Total Acres	Percent of Total Acres	Total Acres	Percent of Total Acres	Total Acres	Percent of Total Acres
Agriculture	9.2	1.6%	808.1	70.3%	817.3	47.1%
Single Family Residential	187.9	32.0%	107.1	9.3%	295.0	17.0%
Vacant	70.2	12.0%	158.8	13.8%	229.0	13.2%
Industrial	113.4	19.3%	34.3	3.0%	147.6	8.5%
Education Services	67.1	11.4%		0.0%	67.1	3.9%
Retail Trade	40.1	6.8%	5.3	0.5%	45.4	2.6%
Mobile Homes	15.3	2.6%	21.0	1.8%	36.3	2.1%
Multi-Family	24.9	4.2%	0.4	0.0%	25.3	1.5%
General Service	9.9	1.7%	9.1	0.8%	19.0	1.1%
Religious/Charitable Services	15.4	2.6%	0.7	0.1%	16.1	0.9%
Duplex	6.1	1.0%	2.2	0.2%	8.2	0.5%
Parks	7.9	1.3%		0.0%	7.9	0.5%
Government	4.8	0.8%		0.0%	4.8	0.3%
Water	2.7	0.5%	1.8	0.2%	4.5	0.3%
Recreation	3.3	0.6%		0.0%	3.3	0.2%
Utilities	1.9	0.3%	0.7	0.1%	2.6	0.2%
Transportation-Related	2.5	0.4%		0.0%	2.5	0.1%
Wholesale Trade	2.1	0.4%		0.0%	2.1	0.1%
Alley, Walkway, Bikepath	1.4	0.2%		0.0%	1.4	0.1%
Roads, other area not in tax lots, or no data	0.1	0.0%	0.7	0.1%	0.9	0.1%
Communication	0.5	0.1%		0.0%	0.5	0.0%
Group Quarters		0.0%	0.1	0.0%	0.1	0.0%
Total	586.6	100.0%	1,150.3	100.0%	1,736.9	100.0%

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 14. Land Inventory by Plan Designation and Location, April 1999

Plan Designation	City Total (City Limits + UGB)				City Limits			UGB		
	Number of Tax Lots	Total Acres	Developed Acres	Vacant Acres	Number of Tax Lots	Total Acres	Developed Acres	Vacant Acres	Number of Tax Lots	Total Acres
Commercial	280	153.0	97.5	55.5	267	102.9	87.5	15.3	13	50.1
Commercial/Residential	101	18.4	17.8	0.6	101	18.4	17.8	0.6		
Industrial	105	480.0	174.0	306.1	65	127.4	124.0	3.4	40	352.6
Low Density Residential	1181	440.2	268.8	171.4	944	194.7	164.7	30.0	237	245.5
Medium Density Residential	101	122.3	62.7	59.6	96	69.8	58.2	11.6	5	52.4
Professional/Technical	8	332.7	0.4	332.2					8	332.7
Public	22	192.1	192.1		20	73.9	73.9		2	118.2
Total	1,798	1,738.7	813.3	925.4	1,493	587.1	526.2	61.0	305	1,151.6
										287.2
										864.4

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 15. Acres by Zoning District Inside the City Limits in April 1999

Zoning District	Number of Tax Lots	Total Acres	Percent of Total Acres	Developed Acres	Vacant Acres
Central Commercial (C2)	64	13.9	2.4%	11.4	2.5
Commercial Residential (CR)	92	17.3	2.9%	16.8	0.5
General Commercial (G2)	218	91.1	15.5%	78.0	13.1
Heavy Industrial (M2)	23	64.0	10.9%	62.0	1.9
Light Industrial (M1)	30	61.7	10.5%	60.5	1.3
Single Family Residential (R1)	466	106.4	18.1%	88.9	17.5
Duplex Family Residential (R2)	487	89.6	15.3%	77.0	12.6
Multi-Family Residential (R3)	46	20.8	3.5%	14.3	6.4
Multi-Structural Residential (R4)	47	48.5	8.3%	43.4	5.1
Public Land (PL)	20	73.9	12.6%	73.9	0.0
Total	1,493	587.1	100.0%	526.2	61.0

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 16. Developed Land by Plan Designation and Location in April 1999

Plan Designation	Total (City + UGB)		City Limits		UGB	
	Developed Acres	Percent of Total Dev Acres	Developed Acres	Percent of Total Dev Acres	Developed Acres	Percent of Total Dev Acres
Commercial	97.5	12.0%	87.5	16.6%	10.0	3.5%
Commercial/Residential	17.8	2.2%	17.8	3.4%		0.0%
Industrial	174.0	21.4%	124.0	23.6%	49.9	17.4%
Low Density Residential	268.8	33.1%	164.7	31.3%	104.2	36.3%
Medium Density Residential	62.7	7.7%	58.2	11.1%	4.4	1.5%
Professional/Technical	0.4	0.1%		0.0%	0.4	0.1%
Public	192.1	23.6%	73.9	14.0%	118.2	41.2%
Total	813.3	100.0%	526.2	100.0%	287.2	100.0%

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 17. Summary of Constraints by Land Classification and Plan Designation in April 1999

Plan Designation	Total (City + UGB)						City Limits						UGB					
	Total Acres	Vacant Acres	Hydric Soil Acres	NWI Acres	Floodpl ain Acres		Total Acres	Vacant Acres	Hydric Soil Acres	NWI Acres	Floodpl ain Acres		Total Acres	Vacant Acres	Hydric Soil Acres	NWI Acres	Floodpl ain Acres	
Commercial	153.0	55.5	3.8	0.3	21.0		102.9	15.3	3.6	0.3	19.7		50.1	40.2	0.3		1.4	
Commercial/Residential	18.4	0.6		0.6	2.5		18.4	0.6		0.6	2.5							
Industrial	480.0	306.1	107.9	12.2	92.1		127.4	3.4	0.2	10.8	46.2		352.6	302.7	107.7	1.5	45.9	
Low Density Residential	440.2	171.4	19.5	14.4	65.1		194.7	30.0	4.7	11.7	51.4		245.5	141.4	14.8	2.7	13.7	
Medium Density Residential	122.3	59.6	7.2	1.3	32.2		69.8	11.6	2.6	1.3	28.5		52.4	48.0	4.6	0.1	3.7	
Professional/Technical	332.7	332.2	59.4	0.5	98.6								332.7	332.2	59.4	0.5	98.6	
Public	192.1						73.9						118.2					
Total	1,738.7	925.4	197.9	29.4	311.4		587.1	61.0	11.1	24.7	148.1		1,151.6	864.4	186.8	4.7	163.2	

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 18. Buildable Vacant Land Inventory by Plan Designation and Location in April 1999

Plan Designation	Total (City + UGB)					City Limits					UGB				
	Number of Tax Lots	Vacant Acres	Est. Wetland Acres	Buildable Acres	Percent of Buildable Acres	Number of Tax Lots	Vacant Acres	Est. Wetland Acres	Buildable Acres	Percent of Buildable Acres	Number of Tax Lots	Vacant Acres	Est. Wetland Acres	Buildable Acres	Percent of Buildable Acres
Commercial	280	55.5	3.8	51.6	7.1%	267	15.3	3.6	11.8	23.6%	13	40.2	0.3	39.9	5.9%
Commercial/Residential	101	0.6		0.6	0.1%	101	0.6		0.6	1.3%	0	0	0	0	0%
Industrial	105	306.1	107.9	198.2	27.2%	65	3.4	0.2	3.2	6.4%	40	302.7	107.7	195.0	28.8%
Low Density Residential	1,181	171.4	19.5	151.9	20.9%	944	30.0	4.7	25.3	50.8%	237	141.4	14.8	126.6	18.7%
Medium Density Residential	101	59.6	7.2	52.3	7.2%	96	11.6	2.6	9.0	17.9%	5	48.0	4.6	43.4	6.4%
Professional/Technical	8	332.2	59.4	272.8	37.5%						8	332.2	59.4	272.8	40.3%
Public															
Total	1,776	925.4	197.9	727.5	100.0%	1,473	61.0	11.1	49.9	100.0%	303	864.4	186.8	677.6	100.0%

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

Table 19. Unconstrained Vacant Land Inventory by Plan Designation and Size Class in April 1999

Plan Designation	Total		<1 Acre		1-4 Acres		5-9 Acres		10-19 Acres		20-49 Acres		50 or More Acres	
	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres	Tax Lots	Acres
Commercial	52	51.647	44	7.0938	7	14.853					1	29.7		
Commercial/Residential	10	0.6315	9	0.6315	1									
Industrial	39	198.18	18	5.5161	5	10.096	4	25.604	7	60.2	5	96.761		
Low Density Residential	162	151.92	128	23.612	25	53.68	4	22.481	5	52.149				
Medium Density Residential	21	52.334	12	2.2091	5	5.5975	1	4.3133	2	18.78	1	21.435		
Professional/Technical							1	6.1999			3	90.054	3	176.54
Public	7	272.8												
Total	291	727.5	211	39.1	43	84.2	10	58.6	14	131.1	10	237.9	3	176.5

Source: Lane Council of Governments, GIS; analysis by ECONorthwest

